



IN THE CLAIMS:

Rewrite the pending claims and add new claims as follows:

1. (Previously Presented) A computer readable memory to direct a computer to function in a specified manner, comprising:

a first set of instructions to automatically determine a type of a speaker of the computer;

a second set of instructions to select a set of filter coefficients for a digital filter based upon the type of the speaker; and

a third set of instructions to realize a parametric equalizer using the digital filter, the digital filter producing an output signal to be input to the speaker from the set of filter coefficients and an input signal;

wherein the parametric equalizer comprises a plurality of equalizer bands, each equalizer band having one or more filters.

2. (Original) The computer readable memory of claim 1 wherein the second set of instructions further include:

a fourth set of instructions to receive user specified equalizer parameters for the parametric equalizer; and

a fifth set of instructions to calculate the set of filter coefficients from the user specified equalizer parameters.

3. (Currently amended) A computer readable memory to direct a computer to function in a specified manner, comprising:

a first set of instructions to automatically determine a type of a speaker of the computer;

a second set of instructions to select a set of filter coefficients for a digital filter based upon the type of the speaker; and

a third set of instructions to realize a parametric equalizer using the digital filter, the digital filter producing an output signal to be input to the speaker from the set of filter coefficients and an input signal; wherein the parametric equalizer comprises a plurality of equalizer bands, each equalizer band having one or more filters;

wherein the second set of instructions further include:

a fourth set of instructions to receive user specified equalizer parameters for the parametric equalizer;

a fifth set of instructions to calculate the set of filter coefficients from the user specified equalizer parameters; and

~~The computer readable memory of claim 2 further comprising:~~

a sixth set of instructions for insuring that a value of a cut/boost parameter of the user specified equalizer parameters meets predefined mathematical criteria.

4. (Currently amended) A computer readable memory to direct a computer to function in a specified manner, comprising:

a first set of instructions to automatically determine a type of a speaker of the computer;

a second set of instructions to select a set of filter coefficients for a digital filter based upon the type of the speaker; and

a third set of instructions to realize a parametric equalizer using the digital filter, the digital filter producing an output signal to be input to the speaker from the set of filter coefficients and an input signal; wherein the parametric equalizer comprises a plurality of equalizer bands, each equalizer band having one or more filters;

wherein the second set of instructions further include:

a fourth set of instructions to receive user specified equalizer parameters for the parametric equalizer;

a fifth set of instructions to calculate the set of filter coefficients from the user specified equalizer parameters;

~~The computer readable memory of claim 2~~

wherein the third set of instructions comprise:

a seventh set of instructions to realize a first equalizer band of the parametric equalizer, the first equalizer band having a first cut/boost parameter;

an eighth set of instructions to realize a second equalizer band of the parametric equalizer, the second equalizer band having a second cut/boost parameter; and

a ninth set of instructions to realize a third equalizer band of the parametric equalizer, the third equalizer band having a third cut/boost parameter.

added
someone
11/23/2008

Set of
Instructions

5. (Previously presented) The computer readable memory of claim 4 further comprising:

a tenth set of instructions for insuring a first combined cut/boost of the first, second and third equalizer bands meets predefined mathematical criteria.

6. (Previously presented) The computer readable memory of claim 5 wherein the tenth set of instructions comprise:

an eleventh set of instructions to determine whether a second combined cut/boost of the first equalizer band and the second equalizer band meets predefined mathematical criteria;

a twelfth set of instructions to determine whether a third combined cut/boost of the second equalizer band and the third equalizer band meets predefined mathematical criteria; and

a thirteenth set of instructions to determine whether a fourth combined cut/boost of the first equalizer band and the third equalizer band meets predefined mathematical criteria.

7. (Previously presented) The computer readable memory of claim 6 wherein:

the eleventh set of instructions uses a relationship for adjacent bands to determine whether the second combined cut/boost meets predefined mathematical criteria;

the twelfth set of instructions uses the relationship for adjacent bands to determine whether the third combined cut/boost meets predefined mathematical criteria; and

the thirteenth set of instructions uses a relationship for non-adjacent bands to determine whether the fourth combined cut/boost meets predefined mathematical criteria.

8. (Previously presented) A method for improving audio quality of a computer including a Universal Serial Bus (USB) loud speaker, the method comprising the steps of:

a) determining automatically a type of the USB loud speaker of the computer;

b) designating a first set of filter coefficients as a selected set of filter coefficients if the USB loud speaker is of a first type;

c) designating a second set of filter coefficients as the selected set of filter coefficients if the USB loud speaker is of a second type;

d) calculating a third set of filter coefficients from equalizer parameters of a parametric equalizer if user specified equalizer parameters are received;

e) designating the third set of filter coefficients as the selected coefficients if user specified equalizer parameters are received; and

f) realizing a parametric equalizer using a digital filter, the digital filter generating an output signal to be input to the USB loud speaker from an input signal and the selected set of coefficients;

wherein the parametric equalizer comprises a plurality of equalizer bands, each such equalizer band having one or more filters.

9. (Currently amended) A method for improving audio quality of a computer including a Universal Serial Bus (USB) loud speaker, the method comprising the steps of:

a) determining automatically a type of the USB loud speaker of the computer;

b) designating a first set of filter coefficients as a selected set of filter coefficients if the USB loud speaker is of a first type;

c) designating a second set of filter coefficients as the selected set of filter coefficients if the USB loud speaker is of a second type;

d) calculating a third set of filter coefficients from equalizer parameters of a parametric equalizer if user specified equalizer parameters are received;

e) designating the third set of filter coefficients as the selected coefficients if user specified equalizer parameters are received;

f) realizing a parametric equalizer using a digital filter, the digital filter generating an output signal to be input to the USB loud speaker from an input signal and the selected set of coefficients; wherein the parametric equalizer comprises a plurality of equalizer bands, each such equalizer band having one or more filters; and

~~The method of claim 8 further comprising the step of:~~

g) insuring that a value of a cut/boost parameter of the parametric equalizer meets predefined mathematical criteria.

10. (Currently Amended) A method for improving audio quality of a computer including a Universal Serial Bus (USB) loud speaker, the method comprising the steps of:

a) determining automatically a type of the USB loud speaker of the computer;

b) designating a first set of filter coefficients as a selected set of filter coefficients if the USB loud speaker is of a first type;

c) designating a second set of filter coefficients as the selected set of filter coefficients if the USB loud speaker is of a second type;

d) calculating a third set of filter coefficients from equalizer parameters of a parametric equalizer if user specified equalizer parameters are received;

e) designating the third set of filter coefficients as the selected coefficients if user specified equalizer parameters are received;

f) realizing a parametric equalizer using a digital filter, the digital filter generating an output signal to be input to the USB loud speaker from an input signal and the selected set of coefficients; wherein the parametric equalizer comprises a plurality of equalizer bands, each such equalizer band having one or more filters; and

~~The method of claim 8~~

wherein the parametric equalizer includes a first equalizer band, a second equalizer band and a third equalizer band.

11. (Previously presented) The method of claim 10 wherein step g comprises the substeps of:

g1) determining whether a first combined cut/boost of the first equalizer band and the second equalizer band meets predefined mathematical criteria;

g2) determining whether a second combined cut/boost of the second equalizer band and the third equalizer band meets predefined mathematical criteria; and

g3) determining whether a third combined cut/boost of the first equalizer band and the third equalizer band meets predefined mathematical criteria.

12. (Previously presented) The method of claim 11 wherein steps g1 and g2 use a relationship for adjacent bands and step g3 uses a relationship for non-adjacent bands.

13. (Previously presented) A computer program product for use in conjunction with a computer system, the computer program product comprising a computer readable storage medium and a computer program mechanism embedded therein, the computer program mechanism comprising one or more modules to improve audio quality of the computer system, the one or more modules including:

a first set of instructions to automatically determine a type of a Universal Serial Bus (USB) speaker of the computer system;

wherein the third set of instructions comprise:

a seventh set of instructions to realize a first equalizer band of the parametric equalizer, the first equalizer band having a first cut/boost parameter;

an eighth set of instructions to realize a second equalizer band of the parametric equalizer, the second equalizer band having a second cut/boost parameter; and

a ninth set of instructions to realize a third equalizer band of the parametric equalizer, the third equalizer band having a third cut/boost parameter.

16. (Previously presented) The computer program product of claim 15 wherein a tenth set of instructions for insuring a first combined cut/boost of the first, second and third equalizer bands meets predefined mathematical criteria.

17. (Previously presented) The computer program product of claim 16 wherein the tenth set of instructions comprise:

an eleventh set of instructions to determine whether a second combined cut/boost of the first equalizer band and the second equalizer band meets predefined mathematical criteria;

a twelfth set of instructions to determine whether a third combined cut/boost of the second equalizer band and the third equalizer band meets predefined mathematical criteria; and

a thirteenth set of instructions to determine whether a fourth combined cut/boost of the first equalizer band and the third equalizer band meets predefined mathematical criteria.

18. (Previously presented) The computer program product of claim 17 wherein:

the eleventh set of instructions uses a relationship for adjacent bands to determine whether the second combined cut/boost meets predefined mathematical criteria;

the twelfth set of instructions uses the relationship for adjacent bands to determine whether the third combined cut/boost meets predefined mathematical criteria; and

the thirteenth set of instructions uses a relationship for non-adjacent bands to determine whether the fourth combined cut/boost meets predefined mathematical criteria.

19. (Currently amended) A computer readable memory to direct a computer to function in a specified manner, comprising:

a first set of instructions to automatically determine a type of a speaker of the computer;

a second set of instructions to select a set of filter coefficients for a digital filter based upon the type of the speaker;

a third set of instructions to realize a parametric equalizer using ~~a~~ the digital filter, the digital filter producing an output signal to be input to the speaker from the set of filter coefficients and an input signal;

a fourth set of instructions to realize a first equalizer band of the parametric equalizer, the first equalizer band having a first cut/boost parameter;

a fifth set of instructions to realize a second equalizer band of the parametric equalizer, the second equalizer band having a second cut/boost parameter; and

a sixth set of instructions to realize a third equalizer band of the parametric equalizer, the third equalizer band having a third cut/boost parameter.

20. (Currently amended) A computer program product for use in conjunction with a computer system, the computer program product comprising a computer readable storage medium and a computer program mechanism embedded therein, the computer program mechanism comprising one or more modules to improve audio quality of the computer system, the one or more modules including:

a first set of instructions to determine a type of a Universal Serial Bus (USB) speaker of the computer system;

a second set of instructions to select a set of filter coefficients for a digital filter based upon the type of the USB speaker;

a third set of instructions to realize a parametric equalizer using ~~a~~ the digital filter, the digital filter producing an output signal to be input to the USB speaker from the set of filter coefficients and an input signal;

a fourth set of instructions to realize a first equalizer band of the parametric equalizer, the first equalizer band having a first cut/boost parameter;

a fifth set of instructions to realize a second equalizer band of the parametric equalizer, the second equalizer band having a second cut/boost parameter; and

a sixth set of instructions to realize a third equalizer band of the parametric equalizer, the third equalizer band having a third cut/boost parameter.